

**Study Number:** I11054B

**Test Type:** TOX

**Route:** Dosing in Water

**Species/Strain:** Rat/Harlan Sprague Dawley

**C Number:**

**Study Gender:**

**PWG Approval Date**

**PA46s: Summary of Gross Pathology**

**Test Compound:** Sulfolane

**CAS Number:** 126-33-0

I11054B

Both

See web page for date of PWG Approval

**Date Report Requested:** 12/07/2018

**Time Report Requested:** 10:06:05

**Lab:** Burleson Research Technologies

F1 Male: Immunopath						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
Disposition Summary						
Animals Initially In Study	12	12	12	12	12	8
Early Deaths						
Survivors						
Scheduled sacrifice, terminal (SD 95 - 96)	12	12	12	12	12	8
Number of Animals Examined	12	12	12	12	12	8

Study Number: I11054B

Test Type: TOX

Route: Dosing in Water

Species/Strain: Rat/Harlan Sprague Dawley

## PA46s: Summary of Gross Pathology

Test Compound: Sulfolane

CAS Number: 126-33-0

Date Report Requested: 12/07/2018

Time Report Requested: 10:06:05

Lab: Burleson Research Technologies

## F1 Male: Immunopath

	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
<b>ALIMENTARY SYSTEM</b>						
INTESTINE, LARGE, COLON	(0)	(0)	(1)	(0)	(0)	(0)
FOCUS			1 (100.0%)			
LIVER	(12)	(12)	(12)	(12)	(12)	(8)
ACCESSORY LOBE; DEFORMITY						1 (13.0%)
LOBE, LATERAL, RIGHT; DEFORMITY				2 (17.0%)		
LOBE, LEFT; DEFORMITY; TAN				1 (8.0%)		
LOBE, LEFT; DEFORMITY			1 (8.0%)	1 (8.0%)		2 (25.0%)
CAUDATE LOBE; DISCOLORATION; BLACK, DIFFUSE, MODERATE					1 (8.0%)	
CAUDATE LOBE; FOCUS; BLACK			1 (8.0%)			
LOBE, LEFT; FOCUS; RED						1 (13.0%)
FOCUS				1 (8.0%)		
MALFORMATION				1 (8.0%)		
CAUDATE LOBE; NODULE; BROWN				1 (8.0%)		
CAUDATE LOBE; NODULE; BROWN, DARK				1 (8.0%)	1 (8.0%)	
NODULE						1 (13.0%)
CAUDATE LOBE; SMALL				2 (17.0%)	1 (8.0%)	
PANCREAS	(0)	(0)	(0)	(0)	(1)	(0)
FOCUS; DARK					1 (100.0%)	
NODULE; MOTTLED					1 (100.0%)	
STOMACH, FORESTOMACH	(1)	(0)	(2)	(1)	(0)	(0)
DIVERTICULUM	1 (100.0%)		2 (100.0%)	1 (100.0%)		
<b>CARDIOVASCULAR SYSTEM</b>						
HEART	(0)	(0)	(1)	(0)	(0)	(0)
DISCOLORATION; MILD, MULTIFOCAL			1 (100.0%)			

F1 Male: Immunopath						
Treatment Groups (mg/L)						
	0	30	100	300	1000	15 mg/kg CPS
ENDOCRINE SYSTEM						
ADRENAL GLAND, RIGHT	(12)	(12)	(12)	(12)	(12)	(8)
GENERAL BODY SYSTEM						
None						
GENITAL SYSTEM						
None						
HEMATOPOIETIC SYSTEM						
LYMPH NODE, MESENTERIC	(12)	(12)	(12)	(12)	(12)	(8)
LYMPH NODE, POPLITEAL	(12)	(12)	(12)	(12)	(12)	(8)
SPLEEN	(12)	(12)	(12)	(12)	(12)	(8)
DEFORMITY			1 (8.0%)			
FOCUS; RED					1 (8.0%)	
SMALL; MARKED						1 (13.0%)
SMALL; MODERATE						7 (88.0%)
THYMUS	(12)	(12)	(12)	(12)	(12)	(8)
SMALL; MARKED						8 (100.0%)
INTEGUMENTARY SYSTEM						
SUBCUTIS	(1)	(0)	(0)	(0)	(0)	(0)
THORACIC; MASS; FIRM	1 (100.0%)					
TAIL	(1)	(0)	(0)	(0)	(0)	(0)
DEFORMITY	1 (100.0%)					
LYMPHOID SYSTEM						
None						

F1 Male: Immunopath						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
MUSCULOSKELETAL SYSTEM						
None						
NERVOUS SYSTEM						
None						
RESPIRATORY SYSTEM						
LUNG	(12)	(12)	(12)	(12)	(12)	(8)
APICAL LOBE; RIGHT; DISCOLORATION; DIFFUSE, MILD, RED						1 (13.0%)
NODULE; BROWN, DARK				1 (8.0%)	1 (8.0%)	
SPECIAL SENSES SYSTEM						
None						
URINARY SYSTEM						
KIDNEY, RIGHT	(12)	(12)	(12)	(12)	(12)	(8)
MASS; FIRM	0 **				4 (33.0%)	
MASS; SOFT	0 *				2 (17.0%)	

F1 Male: SRBC						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
Disposition Summary						
Animals Initially In Study	12	12	12	12	12	8
Early Deaths						
Survivors						
Scheduled sacrifice, terminal (SD 89)	12	12	12	12	12	8
Number of Animals Examined	12	12	12	12	12	8
ALIMENTARY SYSTEM						
None						
CARDIOVASCULAR SYSTEM						
None						
ENDOCRINE SYSTEM						
None						
GENERAL BODY SYSTEM						
None						
GENITAL SYSTEM						
None						
HEMATOPOIETIC SYSTEM						
SPLEEN	(12)	(12)	(12)	(12)	(12)	(8)
DEFORMITY; DEPRESSED, MILD, ONE				1 (8.0%)		
SMALL; MILD			2 (17.0%)			2 (25.0%)
SMALL; MODERATE						6 (75.0%)
THYMUS	(12)	(12)	(12)	(12)	(12)	(8)
SMALL; MARKED						8 (100.0%)
SMALL; MILD			2 (17.0%)			

F1 Male: SRBC						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
INTEGUMENTARY SYSTEM						
None						
LYMPHOID SYSTEM						
None						
MUSCULOSKELETAL SYSTEM						
None						
NERVOUS SYSTEM						
None						
RESPIRATORY SYSTEM						
None						
SPECIAL SENSES SYSTEM						
None						
URINARY SYSTEM						
KIDNEY, LEFT	(1)	(0)	(0)	(0)	(0)	(0)
CYST; CLEAR	1 (100.0%)					
KIDNEY, RIGHT	(0)	(0)	(0)	(2)	(0)	(0)
CYST; CLEAR, MILD				1 (50.0%)		
CYST; CLEAR, ONE				1 (50.0%)		

F1 Female: Immunopath						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
Disposition Summary						
Animals Initially In Study	12	12	12	12	12	8
Early Deaths						
Survivors						
Scheduled sacrifice, terminal (SD 91 - 92)	12	12	12	12	12	8
Number of Animals Examined	12	12	12	12	12	8



Study Number: I11054B

Test Type: TOX

Route: Dosing in Water

Species/Strain: Rat/Harlan Sprague Dawley

## PA46s: Summary of Gross Pathology

Test Compound: Sulfolane

CAS Number: 126-33-0

Date Report Requested: 12/07/2018

Time Report Requested: 10:06:05

Lab: Burleson Research Technologies

## F1 Female: Immunopath

	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
<b>ALIMENTARY SYSTEM</b>						
LIVER	(12)	(12)	(12)	(12)	(12)	(8)
LOBE, LATERAL, RIGHT; DEFORMITY				1 (8.0%)		
LOBE, LEFT; DEFORMITY			1 (8.0%)	1 (8.0%)	2 (17.0%)	
DEFORMITY	1 (8.0%)	1 (8.0%)				
ENLARGED; MODERATE		1 (8.0%)				
CAUDATE LOBE; FOCUS; BROWN, DARK		1 (8.0%)				
CAUDATE LOBE; FOCUS; BROWN, DARK, ONE		1 (8.0%)				
CAUDATE LOBE; FOCUS; DARK, RED					1 (8.0%)	
CAUDATE LOBE; FOCUS; MOTTLED		1 (8.0%)				
CAUDATE LOBE; FOCUS; RED				1 (8.0%)		
LEFT; LOBE, LATERAL; FOCUS				1 (8.0%)		
LOBE, LEFT; FOCUS; RED					1 (8.0%)	
LOBE, LEFT; FOCUS					1 (8.0%)	
LOBE, MEDIAN; FOCUS					1 (8.0%)	
FOCUS; BROWN, DARK		1 (8.0%)				1 (13.0%)
FOCUS; RED					1 (8.0%)	
CAUDATE LOBE; CAPSULE; LESION		1 (8.0%)				
LOBE, MEDIAN; MASS; FIRM, TAN						1 (13.0%)
CAUDATE LOBE; NODULE; BROWN, DARK		1 (8.0%)		1 (8.0%)	1 (8.0%)	
CAUDATE LOBE; NODULE; BROWN, DARK, ONE			1 (8.0%)			
CAUDATE LOBE; NODULE; FIRM			1 (8.0%)			
CAUDATE LOBE; NODULE		1 (8.0%)				
LOBE, LEFT; NODULE; BROWN, DARK					1 (8.0%)	
LOBE, LEFT; NODULE					1 (8.0%)	
LOBE, MEDIAN; RIGHT; NODULE; TAN				1 (8.0%)		
LOBE, MEDIAN; NODULE; FIRM, TAN						1 (13.0%)
LOBE, MEDIAN; NODULE					1 (8.0%)	

**Study Number:** I11054B

**Test Type:** TOX

**Route:** Dosing in Water

**Species/Strain:** Rat/Harlan Sprague Dawley

**PA46s: Summary of Gross Pathology**

**Test Compound:** Sulfolane

**CAS Number:** 126-33-0

**Date Report Requested:** 12/07/2018

**Time Report Requested:** 10:06:05

**Lab:** Burleson Research Technologies

F1 Female: Immunopath						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
CAUDATE LOBE; SMALL		1 (8.0%)			1 (8.0%)	1 (13.0%)
SMALL; MILD						2 (25.0%)
SMALL; MODERATE						1 (13.0%)
STOMACH, FORESTOMACH	(3)	(1)	(3)	(1)	(0)	(2)
DEFORMITY			1 (33.0%)			
DIVERTICULUM	3 (100.0%)	1 (100.0%)	2 (67.0%)	1 (100.0%)		2 (100.0%)
<b>CARDIOVASCULAR SYSTEM</b>						
HEART	(0)	(0)	(0)	(1)	(0)	(0)
FOCUS; DARK				1 (100.0%)		
<b>ENDOCRINE SYSTEM</b>						
ADRENAL GLAND, RIGHT	(12)	(12)	(12)	(12)	(12)	(8)
<b>GENERAL BODY SYSTEM</b>						
PERITONEUM	(0)	(0)	(0)	(0)	(1)	(0)
CYST					1 (100.0%)	
<b>GENITAL SYSTEM</b>						
None						

**Study Number:** I11054B

**Test Type:** TOX

**Route:** Dosing in Water

**Species/Strain:** Rat/Harlan Sprague Dawley

**PA46s: Summary of Gross Pathology**

**Test Compound:** Sulfolane

**CAS Number:** 126-33-0

**Date Report Requested:** 12/07/2018

**Time Report Requested:** 10:06:05

**Lab:** Burleson Research Technologies

**F1 Female: Immunopath**

	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
<b>HEMATOPOIETIC SYSTEM</b>						
LYMPH NODE, MESENTERIC	(12)	(12)	(12)	(12)	(12)	(8)
LYMPH NODE, POPLITEAL	(12)	(12)	(12)	(12)	(12)	(8)
SPLEEN	(12)	(12)	(12)	(12)	(12)	(8)
DEFORMITY	1 (8.0%)					
ENLARGED; MODERATE				1 (8.0%)		
NODULE	1 (8.0%)	2 (17.0%)		1 (8.0%)		
SMALL; MARKED						1 (13.0%)
SMALL; MILD		1 (8.0%)				2 (25.0%)
SMALL; MODERATE				1 (8.0%)		5 (63.0%)
THYMUS	(12)	(12)	(12)	(12)	(12)	(8)
DISCOLORATION; MILD, MOTTLED		1 (8.0%)				
ENLARGED; MODERATE				1 (8.0%)		
SMALL; MARKED						5 (63.0%)
SMALL; MILD						3 (38.0%)
<b>INTEGUMENTARY SYSTEM</b>						
TAIL	(1)	(6)	(3)	(3)	(1)	(0)
DEFORMITY	1 (100.0%)	6 (100.0%)	3 (100.0%)	3 (100.0%)	1 (100.0%)	
<b>LYMPHOID SYSTEM</b>						
None						
<b>MUSCULOSKELETAL SYSTEM</b>						
BONE, FEMUR, LEFT	(1)	(0)	(0)	(0)	(1)	(0)
<b>NERVOUS SYSTEM</b>						
None						

Study Number: I11054B  
Test Type: TOX  
Route: Dosing in Water  
Species/Strain: Rat/Harlan Sprague Dawley

PA46s: Summary of Gross Pathology  
Test Compound: Sulfolane  
CAS Number: 126-33-0

Date Report Requested: 12/07/2018  
Time Report Requested: 10:06:05  
Lab: Burleson Research Technologies

F1 Female: Immunopath						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
RESPIRATORY SYSTEM						
LUNG	(12)	(12)	(12)	(12)	(12)	(8)
ADHESION; MILD	1 (8.0%)	1 (8.0%)				
ADHESION	1 (8.0%)					
DISCOLORATION; DIFFUSE, MILD, RED			1 (8.0%)			
DISCOLORATION; DIFFUSE, MODERATE, RED			1 (8.0%)			
SMALL; MILD						2 (25.0%)
SPECIAL SENSES SYSTEM						
None						
URINARY SYSTEM						
KIDNEY, RIGHT	(12)	(12)	(12)	(12)	(12)	(8)
CYST; CLEAR			1 (8.0%)		2 (17.0%)	
CYST; CLEAR, ONE				1 (8.0%)		
ENLARGED; MODERATE		1 (8.0%)				

Study Number: I11054B  
Test Type: TOX  
Route: Dosing in Water  
Species/Strain: Rat/Harlan Sprague Dawley

PA46s: Summary of Gross Pathology  
Test Compound: Sulfolane  
CAS Number: 126-33-0

Date Report Requested: 12/07/2018  
Time Report Requested: 10:06:05  
Lab: Burleson Research Technologies

F1 Female: SRBC						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
Disposition Summary						
Animals Initially In Study	12	12	12	12	12	8
Early Deaths						
Survivors						
Scheduled sacrifice, terminal (SD 88)	12	12	12	12	12	8
Number of Animals Examined	12	12	12	12	12	8
ALIMENTARY SYSTEM						
None						
CARDIOVASCULAR SYSTEM						
None						
ENDOCRINE SYSTEM						
None						
GENERAL BODY SYSTEM						
None						
GENITAL SYSTEM						
None						
HEMATOPOIETIC SYSTEM						
SPLEEN	(12)	(12)	(12)	(12)	(12)	(8)
DEFORMITY; MILD	1 (8.0%)	1 (8.0%)				
SMALL; MILD						1 (13.0%)
SMALL; MODERATE						7 (88.0%)
THYMUS	(12)	(12)	(12)	(12)	(12)	(8)
SMALL; MARKED						8 (100.0%)

**Study Number:** I11054B  
**Test Type:** TOX  
**Route:** Dosing in Water  
**Species/Strain:** Rat/Harlan Sprague Dawley

**PA46s: Summary of Gross Pathology**  
**Test Compound:** Sulfolane  
**CAS Number:** 126-33-0

**Date Report Requested:** 12/07/2018  
**Time Report Requested:** 10:06:05  
**Lab:** Burleson Research Technologies

F1 Female: SRBC						
	Treatment Groups (mg/L)					
	0	30	100	300	1000	15 mg/kg CPS
INTEGUMENTARY SYSTEM	None					
LYMPHOID SYSTEM	None					
MUSCULOSKELETAL SYSTEM	None					
NERVOUS SYSTEM	None					
RESPIRATORY SYSTEM	None					
SPECIAL SENSES SYSTEM	None					
URINARY SYSTEM	None					

**Study Number:** I11054B

**Test Type:** TOX

**Route:** Dosing in Water

**Species/Strain:** Rat/Harlan Sprague Dawley

**PA46s: Summary of Gross Pathology**

**Test Compound:** Sulfolane

**CAS Number:** 126-33-0

**Date Report Requested:** 12/07/2018

**Time Report Requested:** 10:06:05

**Lab:** Burleson Research Technologies

## LEGEND

---

Number of animals examined given for each tissue

Number (percent) of animals affected given for each observation

No p-values are reported unless there are at least two lesions in one or more of the dose groups

Trend p-values are reported only for those organs that were fully examined in all dose groups

For some animals in the middle dose groups, an organ was analyzed only after a gross lesion was detected. These findings were not analyzed statistically against the control group.

Statistical analysis performed by Cochran-Armitage (trend) and Fisher Exact (pairwise) tests.

Statistical significance for the control group indicates a significant trend test

Statistical significance for a treatment group indicates a significant pairwise test compared to the vehicle control group

\* Statistically significant at  $P \leq 0.05$

\*\* Statistically significant at  $P \leq 0.01$

Statistical analysis for the positive control group compared to the vehicle control group was performed using the Fisher Exact test.

CPS = Cyclophosphamide

**\*\* END OF REPORT \*\***